

Texas taxa of the genus *Berlandiera* (Asteraceae: Heliantheae)**Billie L. Turner**

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ABSTRACT

The state of Texas is recognized as having two species of *Berlandiera*, a widespread *B. lyrata* Benth., represented by the newly proposed var. **purpurea** B.L. Turner, **var. nova.**, and a more localized species of high elevation, **B. macvaughii** B.L. Turner, **sp. nov.**, of trans-Pecos, Texas. Photographs of the types are provided, along with maps showing their distribution.

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BERLANDIERA LYRATA Benth., Pl. Hartw. 17. 1839.

Two geomorphological population systems are recognized within this species; the typical var. **lyrata** is confined to Mexico, but var. **purpurea** extends into northwestern Mexico from the southwestern USA.

1. Disc florets yellow; se Chi, Dur, Agu, Zac, San, n Jal.....var. **lyrata**
 1. Disc florets purple or brownish-purple; Son, n Chi, Coa, USA..... var. **purpurea**

var. **purpurea** B.L. Turner, **var. nov.**

Berlandiera incisa Torr. & Gray

Resembling **B. lyrata** var. **lyrata** but the disc florets purple to brownish-purple (vs yellow), the involucre somewhat smaller (12-15 mm wide vs 15-20 mm), and the achenes mostly 5-6 mm long (vs 4-5); chromosome number, n = 15 pairs.

TYPE: USA. TEXAS: Jeff Davis Co.: Wild Rose Pass, on Hwy 17, ca 22 mi S of Balmorhea city limits, 16 May 1989, *Lindsey Woodruff* 296 [with Mark Mayfield] (Holotype: TEX). **Fig. 1.**

ADDITIONAL SELECTED SPECIMENS EXAMINED: USA. NEW MEXICO: Guadalupe Co.: 25.5 mi SE of Santa Rosa, 10 Aug 1988, *Turner* 15831 (TEX).

TEXAS: Brewster Co.: Alpine, vacant lot across from SRSC campus, 8 Mar 1988, *Turner* 15801 (TEX). **Culberson Co.:** NE part of County, where hwy 285 crosses into Reeves Co., 6 Apr 2001, *Turner* 21-224 (TEX). **King Co.:** ca 2 mi S of Guthrie, 11 Sep 2006, *Turner* 26-49 (TEX). **Martin Co.:** 4.2 mi W of Stanton, 16 Apr 2000, *Turner* 20-77 (TEX). **Menard Co.:** north-central part of County where hwy 83 crosses into Concho Co., 1 Jun 2000, *Turner* 20-361 (TEX). **Reeves Co.:** In center of Balmorhea, waste places, 23 Aug 1999, *Turner* 99-638 (TEX). **Map 1.**

Most of the specimens of Texas represented on my dot maps were also examined and identified accordingly.

The novelty is named for its consistently purple or purplish disc florets (vs yellow, as occurs in var. **lyrata**).

BERLANDIERA MACVAUGHII B.L. Turner, *sp. nov.*

Perennial herbs 15-35 cm high, the stems arising from enlarged woody or lignescent roots. **Leaves** mostly basal, 10-18 cm long, 1.5-4.0 cm wide; petioles 2-7 cm long; blades ovate to linear-oblongate, passing into the petioles, scarcely lobed, if at all, the stem leaves mostly absent (except in occasional putative hybrids with **B. lyrata**), pinnately veined, sparsely pubescent above, more so beneath, the margins crenulate. **Heads** 3-5 cm across the extended rays, borne 1 or 2 to a peduncle, the latter 5-25 cm long. **Involucres** 4-5 seriate, scarcely gradate, the inner series broadly ovate, 10-15 mm long and as wide, their apices to some extent broadly acute to narrowly obtuse, not rounded. **Pales** linear-oblongate, 5-8 mm long, 1-2 mm wide, their apices rounded. **Ray florets** 8, fertile; ligules 10-15 mm long, 3-5 mm wide, yellow on both surfaces, the lower surfaces with 8 or more weakly defined, yellowish veins (as opposed to the fewer, dark purple, well defined veins on the under-surfaces of ligules in **B. lyrata**), irregularly 3-lobed at apex. **Achenes** broadly ovate to cordate, 5-6 mm long, 3-5 mm wide, epappose; dorsal surfaces glabrous; ventral surfaces pubescent, their margins mostly w/o attached pales at maturity. **Disc florets** staminate, numerous; corollas yellow, 4-5 mm long; tube ca 0.5 mm long; throat ca 3 mm long, glabrous; lobes ca 0.5 mm long, pubescent.

TYPE: **USA. TEXAS: Pecos Co.:** "Rocky (limestone) slopes, main canyon on northeast side of Sierra Madera, about 25 miles south of Fort Stockton." ca 1300 m, 25 May 1949, *Rogers McVaugh 10649* (Holotype: TEX; isotype: SRSC). **Fig. 2.**

ADDITIONAL SPECIMENS EXAMINED: **NEW MEXICO. Eddy Co.:** "SW portion of Dark Canyon, near creek bed, reddish sandy loam soil; juniper-ponderosa woodland." 1 Sep 1965, *Powell & Sikes* (SRSC, TEX). **TEXAS. Brewster Co.:** "Rare near top of Baldy Peak, Glass Mts." 13 Jul 1940, *Warnock 255* (TEX). **Culberson Co. [Guadalupe Mts]:** "South fork of McKittrick Canyon." 27 Sep 1962, *Correll & Correll 26043* (LL); "South Fork of McKittrick Canyon, 21 Jun 1964, *Correll & Hanson 29828* (LL); "South McKittrick Canyon, 12 Jul 1948, *Hinckley 4494* (SRSC); "grassy slopes in the Bowl," 21 Jun 1958, *Johnston 3189* (SRSC); "Pine Top Mt.," 15 Sep 1958, *Turner & Warnock 176* (SRSC); "lower McKittrick Canyon," 30 Apr 1961, *Warnock 18426* (SRSC, TEX); "South McKittrick Canyon," 26 Apr 1962, *Warnock 18487* (SRSC); "Upper Pine Spring Canyon, 3 Apr 1947, *Warnock & Harvill 5523* (SRSC); "South McKittrick Canyon, 18 May 1958, *Warnock & Johnston 16459* (SRSC); "south slope of Pine Top Mt., 28-29 Jul 1952, *Webster 4576* (SRSC); South McKittrick Canyon, 10 Jun 1971, *Weston 79* (SRSC); "Rocky Bluffs near Pine Springs." 15 Aug 1916, *Young s. n.* (SRSC, TEX). **Map 2.**

As might be noted, **B. macvaughii** is abundant in The Guadalupe Mts. of Culberson County. It is apparently rare in the higher elevations of the Glass and Sierra Madera Mts., to judge from the few collections assembled to date from the two sites. So far as known, the widespread, commonly encountered, **B. lyrata** does not grow with or near **B. macvaughii**.

The collection *Correll & Correll 26043* from McKittrick Canyon has the general habit and stem-leaves of **B. lyrata** var. **purpurea**, but it is a larger plant with larger, more pinnatifid, basal leaves, having yellow disc florets and achenes with peripheral pales attached. This may prove to be a hybrid (perhaps ancestral) between the two taxa concerned, but so far as known the two species do not occur together.

Pinkava (2006), presumably, would position most of the specimens cited here in his broad concept of **B. lyrata**, noting that "Exceptional specimens that are scapiform (sometimes monocephalic) with mostly undivided leaves and with wartlike hairs on peduncles occur at higher elevations (south-central New Mexico, trans-Pecos Texas, and Nuevo Leon). They have yellow disc corollas, as do most collections from Chihuahua, Durango, Nuevo Leon and Tamaulipas." The material from New Mexico

and trans-Pecos, Texas, referred to by Pinkava I would assign to **B. macvaughii**; those from Nuevo Leon I treat as **B. basalaris** B.L. Turner (in prep).

In my treatment of **Berlandiera** for Mexico (in prep) I intend to recognize six taxa, including **B. lyrata** var. **purpurea**.

It is a pleasure to name the novelty for the late Rogers McVaugh (1909-2009), collector of the Type and well-known student of the trans-Pecos flora. As indicated, Rogers lived to be 100 years old, setting standards for those of my ilk, just ready to turn 90. I first met him in Alpine, Texas in 1947, while a pre-law student at Sul Ross State College, having taken a few botany classes on the side to satisfy my interest in natural history. My field trip up Cathedral Mt. with McVaugh and Warnock in the late 1940s largely convinced me that I had rather be a botanist than a lawyer. McVaugh remained one of my closest friends throughout the remainder of his life, always a guest at my house in Austin, Texas, while passing through on the way from Michigan to his first love, botanically speaking, Mexico.

ACKNOWLEDGEMENTS

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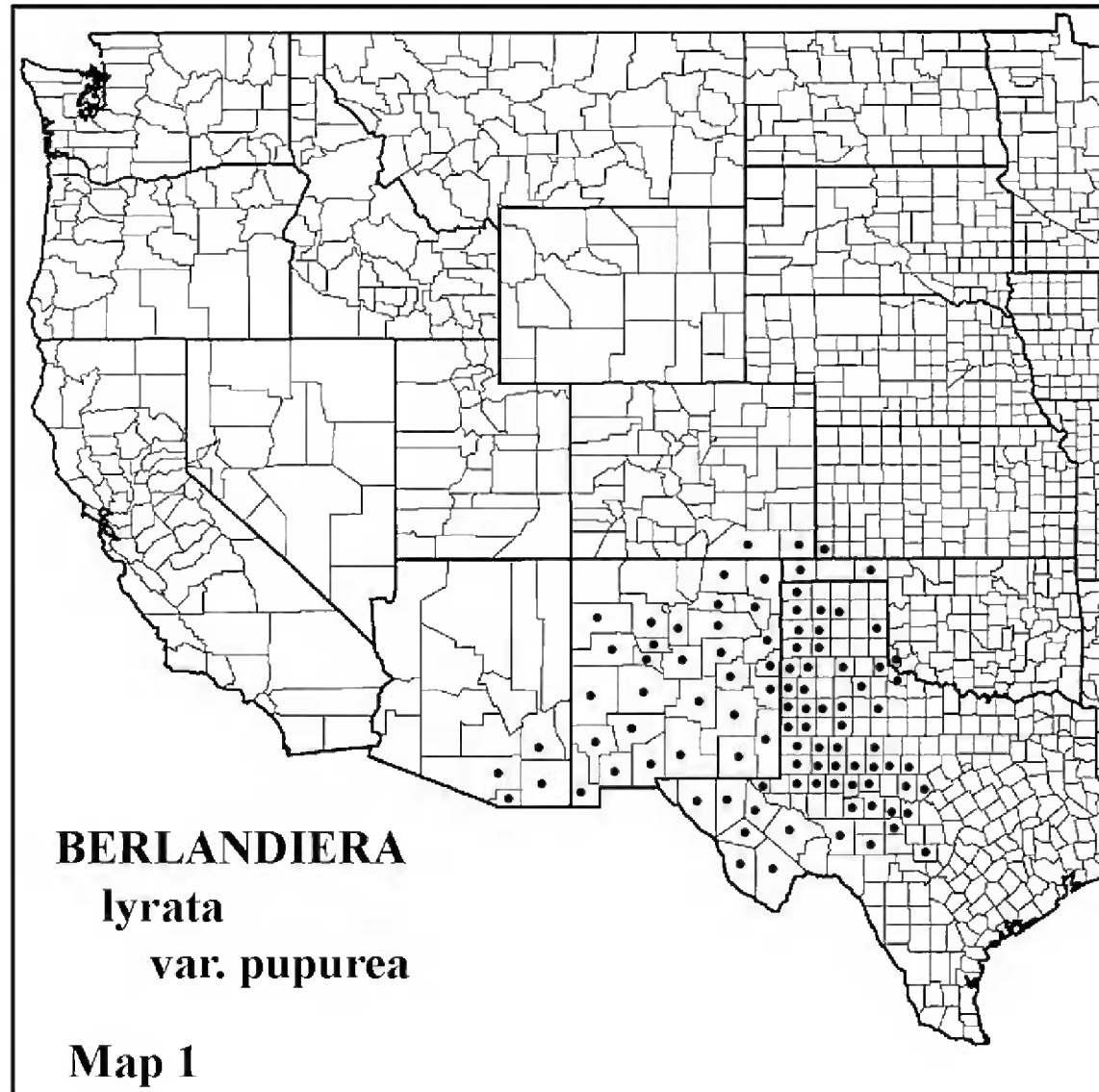
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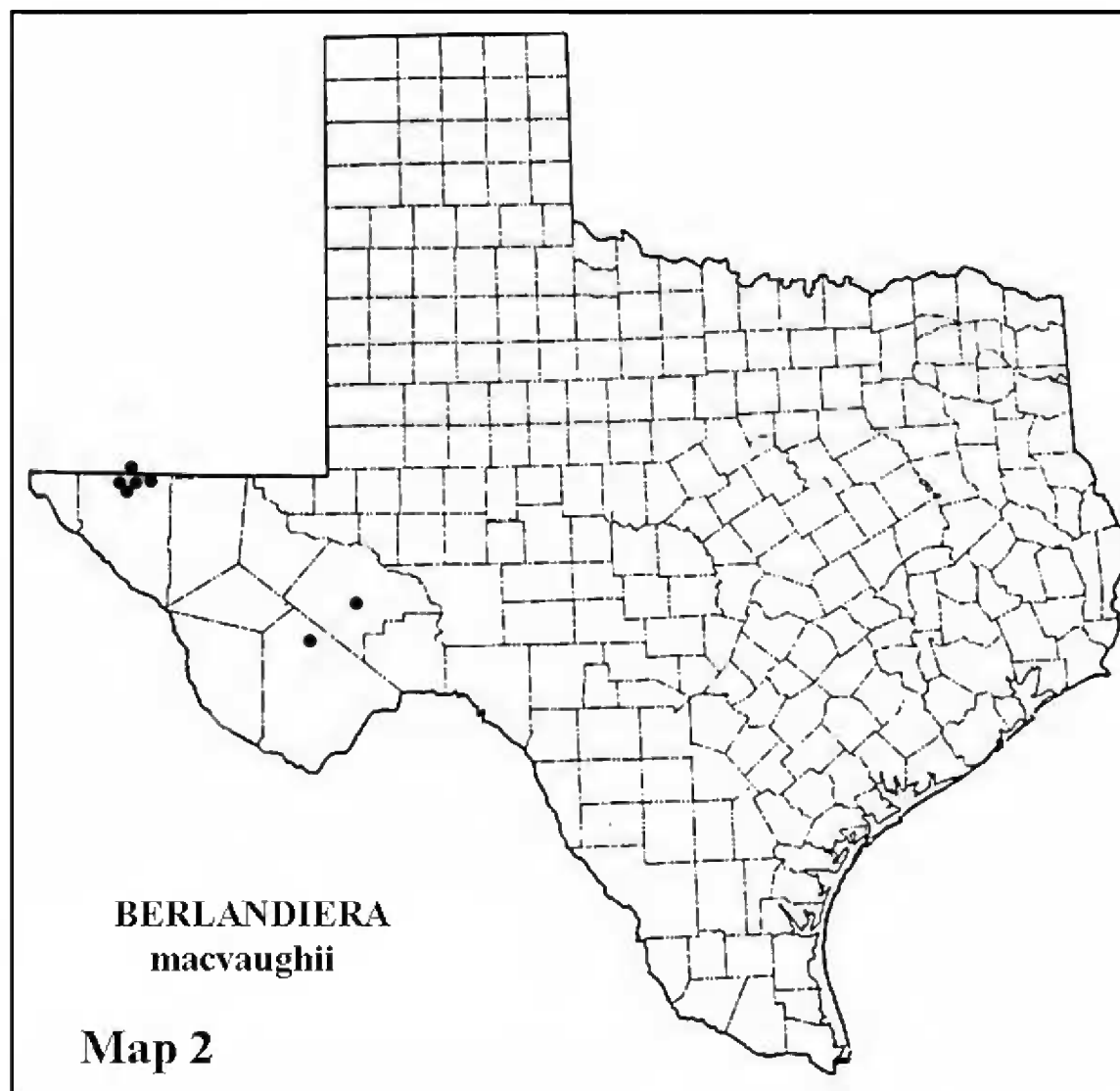
Fig. 1. Holotype of *Berlandiera lyrata* var. *purpurea* (TEX).



Fig. 2. Holotype of *Berlandiera macvaughii* (TEX).



Map 1. Distribution of *Berlandiera lyrata* in the USA.



Map 2. Distribution of *Berlandiera macvaughii*.